headache, a sense of fulness in the head, with a clouding to a slight extent of the mental processes. When the doses are increased to 3 grams a day these symptoms are established in a majority of the cases but not in every case. They are also sometimes attended by a very distinct feeling of nausea and occasionally by vomiting, though the latter act is rarely established. There is a general feeling of discomfort, however, in almost every case, but the quantities required to establish these symptoms vary greatly with different individuals. In some cases very large quantities may be taken without the establishment of marked symptoms, while in other cases from 1 to 2 grams per day serve to produce in a short time feelings of discomfort and distress.

No conclusions were reached in regard to smaller quantities than half a gram per day of the preservative, and, therefore, any statements in regard to the administration of smaller quantities must be based largely upon the results obtained with the quantities actually employed. It is reasonable to infer that bodies of this kind not natural to nor necessary in foods which exert a marked injurious effect, when used in large quantities for short periods of time, would have a tendency to produce an injurious effect when used in small quantities for a long time. The general course of reasoning, therefore, would seem to indicate that it is not advisable to use borax in those articles of food intended for common and continuous use. When placed in food products which are used occasionally and in small quantities it seems only right, in view of the above summary of facts, to require that the quantity and character of the preservative, that is, whether borax or boric acid, be plainly marked so that the consumer may understand the nature of the food he is eating.

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*LABORATORIES FOR BOTANICAL RESEARCH.**

THE publicity given to the opening ceremonials of the new science laboratories at Cambridge by the king and queen on March 1 will, it may be hoped, do something to rouse those who are responsible for the welfare of the nation to a wider sense of their duties. The time has surely passed when the remarks of a well-known prelate and of a prime minister, to the effect that they were born in a pre-scientific era, could be received, if not with overt applause, at least with sneaking sympathy.

Sluggish as we are, some progress has been made. Up to the middle of the last century, and for some time after, there was scarcely a botanical laboratory properly so called in the whole country. Now we have the Jodrell Laboratory at Kew, a very modest institution when compared with the necessities of the case or to the excellent equipment of other departments of this great national establishment. The Jodrell Laboratory is not intended for instructional purposes, but chiefly for study and research, and much good work has been done there.

At Cambridge, Edinburgh, Glasgow, Dublin, at University College, London, the Royal College of Science, and in many other universities, agricultural colleges and technical institutes, there are now more or less well-equipped laboratories under competent direction. But these are mainly for the instruction of students. Research laboratories are still rare, and those willing and competent to utilize them are also few in number. This condition of affairs is largely due to the indifference and lack of encouragement on the part of those who ought to know better. The *cui bono* question is ever in their minds, and much too frequently on their lips. Abstract science does not appeal to their sympathies, or to their intelligence, unless some immediate practical result at once comes into view. When that happens the commercial instinct may perchance be aroused, and they begin to ask, will it pay? Of course, no reader of this journal is likely to undervalue abstract science, and most of them are well aware of the enormous value of the practical results that may and do result from it. But even such persons must have been startled to find how the observations of Bower and others on the minute anatomy of the prothallus and spore-producing tissues of ferns, observations which might have been thought to be too abstruse and recondite to be of any practical value whatever, have directly led up to the

* From *Nature*.

extremely important researches of Farmer and his associates into the essential nature of cancer!

Satisfactory as this undoubtedly is, we have only to look across the channel to see how puny—numerically and financially speaking—are our efforts to promote original research. Our cousins across the Atlantic, a practical people if ever there was one, are even more energetic. Does a 'freeze' destroy or seriously injure the oranges of Florida, what matter? In a very short time a man of science and a man of resource is on the spot. He looks for and finds a hardy stock whereon to graft the tender scion, he puts the resources of hybridization to the test in the endeavor to procure hardy seedlings. All this is done at once by state or government agency. Here, if anything were tried in a parallel case, it would be with great deliberation and with little or no encouragement or support.

Those familiar with what is done to promote research in the universities and colleges of the United States, as at New York, Chicago, Philadelphia and in California, not to mention the older foundations of Harvard and Yale, must feel almost aghast at the progress that is being made, and at our own backwardness. In the *Gardeners' Chronicle* for January 30 is an article contributed by a well-known professor familiar with what is being done here as well as there. In that article he gives details as to the astonishing activity manifested in the American universities, mainly by the aid of funds provided by private individuals. We too have reason to know and appreciate what is done by the government agricultural department, and by the very numerous experimental stations scattered all over the wide territories of the United States.

As we write, there comes to us a report of the establishment, under the auspices of the Carnegie Institution, of a 'desert botanical laboratory, the purpose of such establishment being to study thoroughly the relation of plants to an arid climate and to substrata of unusual composition.' A laboratory has accordingly been erected near Tucson, in Arizona, under the management of Dr. W. A. Cannon, of the New York Botanical Garden, who has been appointed resident investigator in charge of the laboratory. What may be described as a sort of preliminary report has been drawn up by Mr. Coville and Dr. MacDougal, and a very interesting and copiously illustrated report it is.

As some of our readers may care to see this publication, we may add that it is issued by the Carnegie Institution of Washington, U. S. A. (publication No. 6).

Vast as is their territory, and numerous as are their experimental stations and like institutions, our cousins are not yet satisfied. They have invaded British territory, in a most genial and friendly manner it is true, but still they have annexed, with our consent, a portion of the island of Jamaica, and there they have established, at 'Cinchona,' a botanical laboratory and research station open to the students of all countries. The direction is in the hands of Dr. Britton, of the New York Botanical Garden, in cooperation with Mr. Fawcett, the director of public gardens and plantations in the island. The policy of the 'open door' pursued by the Americans in these matters prevents us from doing anything but acquiesce in their proceedings. But why what should have been a plain duty for us should have been allowed to be undertaken by others is a mystery.

We do not question the utility of ironclads and cruisers as protectors of our commerce, but it is obvious to those who are watching the proceedings of our neighbors and of our rivals that if we do not largely extend our scientific training and induce our wealthy citizens to follow the example of their American brethren in endowing science, the necessity for protection will vanish, and that not slowly.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE.

The International Council met on Monday, May 23, and Tuesday, May 24, 1904, at the Rooms of the Royal Society of London, and transacted business as follows:

On the motion of Dr. Uhlworm, Professor H. E. Armstrong was elected chairman of the meeting and Dr. H. Forster Morley secretary.